

IN THE CLAIMS:

Claims 1-36 (cancelled).

Claim 37. (currently amended) A process for the recovery of lactic acid from an aqueous solution containing a water-soluble lactate salt and having a pH between 4 and 14, which process comprises:

(a) contacting said aqueous solution with a protonated cation exchanger to form an aqueous solution of lactic acid and a cation exchanger having cations bound thereto, said cations being derived from said lactate salt;

(b) regenerating said protonated cation exchanger by treating the protonated cation exchanger with a regenerate consisting of ~~using~~ an acid or an acidic salt solution to yield a second product, wherein said second product is a basic form of said cation of said lactate salt; and

(c) recovering lactic acid from said aqueous solution of lactic acid.

Claim 38. (previously presented) The process of claim 37, wherein said recovery of lactic acid occurs simultaneously with said formation of said aqueous solution of lactic acid in step (a).

Claim 39. (previously presented) The process according to claim 37, wherein said regenerating step comprises heating said cation exchanger having cations bound thereto.

Claim 40. (previously presented) A process for the recovery of lactic acid from an aqueous solution containing a water-soluble lactate salt and having a pH between 4 and 14, which process comprises:

(a) contacting said aqueous solution with a protonated cation exchanger to form an aqueous solution of lactic acid and a cation exchanger having cations bound thereto, said cations being derived from said lactate salt;

(b) contacting said cation exchanger having cations bound thereto with an acidic salt of a di- or triprotic acid to regenerate said protonated cation exchanger and to neutralize the acidic salt, said neutralized salt containing a cation derived from said lactate salt and an anion of said neutralized acidic salt of a di- or triprotic acid;

(c) heating said neutralized salt to yield a second product, wherein said second product is a basic form of said cation of said lactate salt, and to regenerate said acidic salt of said di- or triprotic acid; and

(d) recovering lactic acid from said aqueous solution of lactic acid.

Claim 41 (previously presented) The process according to claim 40, wherein said acidic salt of a di- or triprotic acid is an acidic sulfate salt having the formula NH_4HSO_4 or MHSO_4 where M is an alkali cation.

Claim 42 (previously presented) The process according to claim 41, wherein said acidic sulfate salt has the formula NH_4HSO_4 or NaHSO_4 .

Claim 43. (previously presented) The process according to claim 37 or 40, wherein said cation exchanger is a water-immiscible liquid cation exchanger.

Claim 44. (previously presented) The process according to claim 37 or 40, wherein said cation exchanger is a solid cation exchanger.

Claim 45. (previously presented) The process according to claim 37 or 40, wherein said second product is used as a neutralizing agent in fermentation.

Claim 46. (previously presented) The process according to claim 37 or 40, wherein said recovery of said lactic acid from said lactic acid aqueous solution is effected by contacting said solution with a lactic acid extractant.

Claim 47. (previously presented) The process according to claim 37 or 40, wherein said recovery of said lactic acid from said aqueous solution is effected by contacting said solution with a lactic acid absorbent.

Claim 48. (previously presented) The process according to claim 37 or 40, wherein said recovery of said lactic acid from said aqueous solution is effected by contacting said solution with an anion exchanger in its free base form.

Claim 49. (previously presented) The process according to claim 48, wherein said anion

exchanger is a water-immiscible liquid anion exchanger.

Claim 50. (previously presented) The process according to claim 48, wherein said anion exchanger is a solid anion exchanger.

Claim. 51. (previously presented) The process according to claim 48, wherein said anion exchanger, in its free base form, has an apparent basicity corresponding to pKa of not higher than 6.

Claim 52. (previously presented) The process according to claim 48, wherein said anion exchanger, in its free base form, has an apparent basicity corresponding to pKa of not higher than 4.5.

Claim 53. (previously presented) The process according to claim 48, wherein said cation exchanger and said anion exchanger are simultaneously contacted with said lactate salt-containing aqueous solution.

Claim 54. (previously presented) The process according to claim 48, wherein said cation exchanger and said anion exchanger are repeatedly alternately contacted with said lactate salt-containing aqueous solution.

Claim 55. (previously presented) The process according to claim 48, wherein said anion

exchanger is separated from said lactate salt-containing aqueous solution by an anion exchange membrane.

Claim 56. (previously presented) The process according to claim 48, wherein said anion exchanger is separated from said lactate salt-containing aqueous solution by a dense neutral hydrophilic membrane.

Claim 57. (previously presented) The process according to claim 48, wherein said anion exchanger is separated from said lactate salt-containing aqueous solution by a dense neutral hydrophobic membrane.

Claim 58. (previously presented) The process according to claim 37 or 40, wherein said cation exchanger is separated from said lactate salt-containing aqueous solution by a cation exchange membrane.

Claim 59. (previously presented) the process according to claim 37 or 40, wherein said cation exchanger is separated from said lactate salt-containing aqueous solution by a dense neutral hydrophilic membrane.

Claim 60. (previously presented) The process according to claim 37 or 40, wherein said cation exchanger is separated from said lactate salt-containing aqueous solution by a dense neutral hydrophobic membrane.

Claim 61. (previously presented) The process according to claim 37 or 40, wherein said cation exchanger, in its free acid form, has an apparent acidity corresponding to a pKa of not lower than 2.

Claim 62. (previously presented) The process according to claim 37, wherein said regenerating in step (b) comprises a thermal hydrolysis to regenerate said cation exchanger in its acid form and to yield said second product.

Claim 63. (previously presented) The process according to claim 62, wherein said second product is selected from the group consisting of hydroxides, carbonates and bicarbonates of alkali and alkaline earth metals.

Claim 64. (previously presented) The process according to claim 39 or 40, wherein said heating is conducted at a temperature higher than 80°C.

Claim 65. (previously presented) The process according to claim 39 or 40, wherein said second product is transferred into a vapor phase.

Claim 66. (previously presented) The process according to claim 37 or 40, wherein said lactate salt is ammonium lactate and said second product is ammonia.

Claim 67. (previously presented) The process according to claim 37 or 40, wherein said lactate

salt is a product of fermentation.

Claim 68. (previously presented) The process according to claim 37 or 40, wherein said contacting in step (a) is conducted in a CO₂-containing atmosphere.